PCN88
COMPARING TYROSINE KINASE INHIBITOR TREATMENT STRATEGIES FOR NEWLY DIAGNOSED CHRONIC MYELOID LEUKEMIA IN CHRONIC PHASE WHEN IMATINIB LOSES PATENT EXCLUSIVITY IN THE U.S.: A COST-EFFECTIVENESS ANALYSIS
Padula W[1], Larson R[1], Conti R[1], Dusetzina S[2]
[1]University of Chicago, Chicago, IL, USA, [2]University of North Carolina, Chapel Hill, NC, USA
OBJECTIVES: To analyze the cost-effectiveness of imatinib as first-line therapy from 2016-2021 compared to physician's choice of other approved second-generation tyrosine kinase inhibitors (TKIs) dasatinib or nilotinib in chronic myeloid leukemia in chronic-phase (CML-CP), once imatinb loses patent exclusivity. **METHODS:** A Markov model simulating "imatinib-first" compared to "physician choice" in treating CML-CP in 2016 through 5 years from the U.S. commercial payer perspective. In both approaches, if initial treatment fails, patients are switched to second-generation TKIs. Patients switch if they fail efficacy endpoints: 12-month complete cytogenetic response (CCyR); or 3-month early molecular response (EMR). Patients are then followed from switching through overall survival. They can also deteriorate to accelerated phase/blast crisis or death. The model assumes stabilized prices of second-generation TKIs, but adjusts the price of imatinib to be 100% of the branded price for first 6-months, 60-80% for the second 6-months and 10-30% thereafter based on patent expiration. For each drug, probabilities of treatment choice, switching and failure were meta-analyzed from published clinical trials. Quality-adjusted life years (QALYs) were based on US-societal health utilities. Direct medical costs per patient were calcated from Marketscan commercial claims (2011-2012), including annual drug prices. 2013 U.S.-dollars and QALYs were discounted at 3%. Univariate and multivariate sensitivity analyses tested parameters with greatest impact on results. Findings were interpreted from a willingness-to-pay of $100,000/QALY. **RESULTS:** Based on a 12-month CCyR, imatinib-first ($270,772; 3.80 QALYs) was cost-effective compared to physician choice ($361,935; 3.93 QALYs), an incremental cost-effectiveness ratio (ICER) of $701,000/QALY. The ICER based on 3-month EMR was $470,000/QALY. Results were robust to uncertainty. The probabilistic sensitivity analysis demonstrated that imatinib-first was cost-effective in 99% of simulations. **CONCLUSIONS:** When imatinib loses patent protection in 2016 in the U.S. and its price declines, it will be the cost-effective treatment strategy for CML-CP compared to dasatinib and nilotinib.

PCN89
COST-EFFECTIVENESS ANALYSIS OF ADO-TRASTUZUMAB EMTANSINE COMPARED TO LAPATINIB-CAPECITABINE COMBINATION IN HER2-POSITIVE METASTATIC BREAST CANCER
Gor D, Lee W, Kim K, Mohan A, Peng K, Sarangpur S, Shinde S, Touchette D
University of Illinois at Chicago, Chicago, IL, USA
OBJECTIVES: Patients with HER2-positive metastatic breast cancer (MBC) who receive Trastuzumab and/or taxanes often need treatment with different agents, such as Ado-trastuzumab emtansine (TDM-1) or a combination of Lapatinib and Capecitabine (L+C), when disease progresses. Although TDM-1 has better efficacy in improving survival, its high cost compared to L+C needs further economic evaluation. This study aimed to assess the cost-effectiveness of TDM-1 compared to L+C in MBC patients from a U.S. payer's perspective. **METHODS:** A Markov model depicting MBC progression for a total of 120 21-day treatment cycles (6.9 years) was developed. Clinical endpoints in the model included progression-free survival and overall survival. The model included the impact of disease progression and toxicity from cancer drugs. Cancer drug toxicities included were thrombocytopenia, neutropenia, hepatotoxicity, peripheral neuropathy, and pulmonary toxicity. Effectiveness inputs were derived from a Phase-III clinical trial comparing TDM-1 and L+C; cost and utility inputs from published literature and expert opinion. All cost inputs were expressed in 2014 U.S. dollars. The incremental cost-effectiveness ratio (ICER) was calculated using quality-adjusted life years (QALY) as the effectiveness measure. One-way sensitivity analyses were performed. **RESULTS:** Patients receiving TDM-1 cost $241,109 with 1.88 QALYs gained over the 6.9 years, compared with $200,541 and 1.56 QALYs in L+C group. The base-case ICER was $124,247/QALY. Compared to L+C, patients treated with TDM-1 had an expected 0.45 years longer survival and 0.31 years longer progression-free survival. The ICER varied from $70,270 to $178,223 per QALY when the TDM-1 cost changed from 80 to 120% of its current price. **CONCLUSIONS:** The determination of TDM-1 being cost-effective for MBC patients depends on the willingness-to-pay threshold used. Patients derived significant life expectancy gains from TDM-1, leading to longer treatment with this costly agent.

PCN90
COST-EFFECTIVENESS OF A BIOPSY-BASED 8-PROTEIN PROGNOSTIC ASSAY TO OPTIMIZE TREATMENT DECISIONS IN GLEASON 3+3 AND 3+4 PROSTATE CANCER
Roth JA[1], Ramsey S[1], Carlson JJ[2]
[1]Fred Hutchinson Cancer Research Center, Seattle, WA, USA, [2]University of Washington, Seattle, WA, USA
OBJECTIVES: Clinico-pathologic factors alone are insufficient to predict the likelihood of progression of Gleason 3+3 & 3+4 prostate cancer. Therefore, many patients receive treatment, despite having unaggressive tumors. A novel prognostic assay (ProMark™) that uses quantitative measurements of protein biomarkers has been validated to predict prostate cancer aggressiveness at the time of biopsy. Our objective was to evaluate the potential cost-effectiveness of using this 8-protein assay to inform treatment decisions. **METHODS:** We developed a Markov model to estimate quality-adjusted life-year (QALY) and cost outcomes for assay and usual care (NCCN guidelines) strategies over 5-year and lifetime horizons. The proportion of patients classified as low, intermediate, and high-risk for each strategy was derived from the assay's validation study. Treatment distributions, costs, utilities, and mortality were derived from the peer-reviewed literature. In the base case, we assumed an increase in the use of active surveillance (AS) vs treatment of 14.5% (vs usual care). We also evaluated small and large shift scenarios of 7.8% and 20.2%, respectively. We calculated the incremental QALYs, costs, and cost-effectiveness ratio (ICER) in each scenario. **RESULTS:** The assay strategy was dominant in all scenarios evaluated. In the 5-year and lifetime horizon analyses, the assay resulted in 0.02 and 0.04 more QALYs and $780 and $730 less in costs, respectively. The small and large shift scenarios resulted 0.02 and 0.05 more QALYs, and $5 and $1,300 less in costs over a lifetime horizon, respectively. The ICER was most sensitive to the assay cost, the AS health state utility, and the proportion of low-risk patients receiving AS in usual care. **CONCLUSIONS:** Our results suggest that the 8-protein prognostic assay is potentially cost-effective vs. usual care in patients with Gleason 3+3 & 3+4 prostate cancer. Future studies will evaluate the impact of the assay on patient/physician treatment choices in real-world settings.

PCN92
COST EFFECTIVENESS ANALYSIS OF PANITUMUMAB + FOLFOX AS 1ST LINE OF TREATMENT OF MCRC RAS-WT
Alva ME[1], Vargas J[2]
[1]Amgen, Mexico City, Mexico, [2]Econopharma, Mexico City, Mexico
OBJECTIVES: To perform a cost-effectiveness analysis of Panitumumab+FOLFOX vs Bevacizumab+FOLFOX as first-line treatment on RAS-WT mCRC patients from the Mexican public healthcare system perspective. METHODS: The evaluation was performed using a Markov model that simulates a hypothetical cohort of patients over seven health-stages in two-week transition cycles. Progression-free survival (PFS) and overall survival (OS) were used as reported in the PEAK trial. Resource use was obtained from five oncologists at four public healthcare institutions. Costs include chemotherapy, follow-up, adverse events, metastasis resection, second-line treatment, palliative care, and funeral costs. Mexican Social Security Institute costs were applied. Costs and benefits are discounted at 5% for a 10-year time line. Additionally, a cost-minimization vs Cetuximab was performed due to equivalence in OS described in the ASPECCT trial and similar values of PFS and OS reported in first line for comparable populations. **RESULTS:** The total costs are $1,048,009.42 for Panitumumab (mean life of 3.47 years), and $872,201.70 for Bevacizumab (mean life of 2.80 years), with a mean cost-effectiveness ratio per month of OS of $25.173 and $25.932, respectively. The 10-month projection for anti-EGFR therapies reveals a total cost of $779,873.60 for Panitumumab and $1,119,871.90 for Cetuximab, which represents savings of $339,998.30 (30.4%) per patient. **CONCLUSIONS:** Panitumumab as first-line treatment improves the clinical parameters of RAS-WT mCRC patients and presents a mean cost-effectiveness ratio similar to Bevacizumab in this population. Regarding to Cetuximab, Panitumumab is a cost-saving strategy, with reduction in total costs of treatment and administration for public healthcare institutions in Mexico.

PCN93
COST-EFFECTIVENESS OF CETUXIMAB+FOLFIRI VERSUS FOLFIRI AT THE PUBLIC HEALTHCARE SYSTEM IN BRAZIL – THE CRYSTAL TRIAL RAS SUBGROUP ECONOMIC PERSPECTIVE
Junqueira M[1], de Campos MC[1], Cardoso AP[1], von Hohnhorst P[2], Fujii RK[1]
[1]Merck Serono, São Paulo, Brazil, [2]Merck Serono, Frankfurt, Germany
OBJECTIVES: Colorectal cancer is the second cause of cancer-related mortality worldwide. In Brazil, the National Cancer Institute estimated the occurrence of 32,600 new colorectal cancer cases (15,070 cases in males and 17,530 cases in females) for 2014. Considering the disease impact and the recent findings of relevant clinical trials under new biomarkers' evaluations in the RAS gene, we developed a cost-effectiveness analysis evaluating the use of cetuximab in combination with FOLFIRI (folinic acid, fluorouracil and irinotecan) compared to FOLFIRI alone for metastatic colorectal cancer (mCRC) in RAS wild-type patients, in the public health care system in Brazil. **METHODS:** To estimate the costs and outcomes of the treatments we designed a Markov model in which patients with mCRC were evaluated considering the natural course of the disease during a time horizon of 10 years. The outcomes were evaluated in terms of life year saved. Efficacy data was retrieved primarily from the CRYSTAL trial, recently evaluated in light of the new RAS biomarker. Only direct 2014 medical costs were considered. Costs were obtained from the public database DATASUS. Costs and outcomes were discounted to present value at a 5% annual rate. **RESULTS:** In the comparison with cetuximab+FOLFIRI vs FOLFIRI, the incremental effectiveness estimated was 0.7 life years, with an incremental cost of BRL 46,007.34, representing a cost-effectiveness ratio of 66,090.91. Considering a GDP per capita of BRL 24,065.00, the ICER calculated could be considered cost-effective since it would fall under the threshold of 3 times the GDP per capita. **CONCLUSIONS:** Cetuximab+FOLFIRI has shown to be cost-effective in mCRC RAS wild-type patients, enabling a significant and clinically meaningful increase in survival supported by the new findings from the CRYSTAL trial in the RAS population subgroup.

PCN94
ECONOMIC EVALUATION OF TRANSARTERIAL CHEMOEMBOLIZATION WITH LIPIODOL VERSUS DRUG ELUTING BEAD FOR THE TREATMENT OF HEPATOCELLULAR CARCINOMA IN EGYPTIAN PATIENTS
Fouad S[1], Elsisi G[1], Elmahdawy M[2]
[1]Pharmacoeconomic Unit, Central Administration for Pharmaceutical Affairs, Ministry of Health, Egypt, Cairo, Egypt, [2]Hospital Pharmacy Administration Central Administration for Pharmaceutical Affairs, Ministry of Health, Egypt, Cairo, Egypt
OBJECTIVES: To evaluate the cost-effectiveness of conventional Transarterial chemoembolization with Lipiodol (cTACE) compared to Drug-Eluting-Bead-Chemoembolization (DEB TACE) in patients with hepatocellular carcinoma (HCC) from the Ministry of health perspective. **METHODS:** A decision tree model was developed based on the Egyptian clinical practice, and was derived from published sources. This decision analytical model was constructed to assess the costs and consequences associated with cTACE compared with DEB TACE. The clinical parameters were derived from a comparative study previously published. Direct medical costs were obtained from the Ministry of health hospitals in Egypt. Deterministic sensitivity analyses were conducted. No discounting was conducted. **RESULTS:** The total survival days of